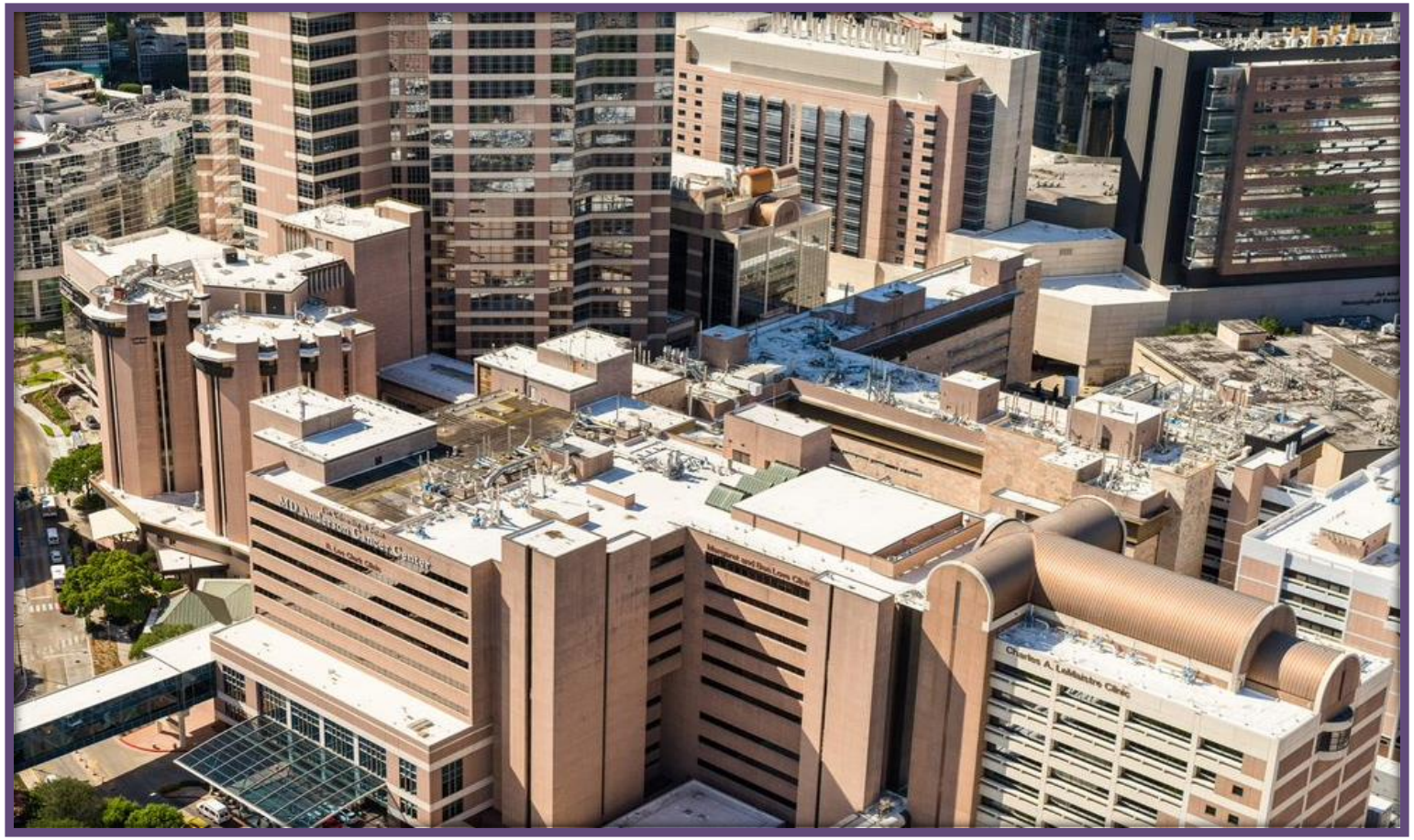


Removing the Mask with SGRT

The MD Anderson Experience

THE UNIVERSITY OF TEXAS
MD Anderson Cancer Center
Making Cancer History®

WHO WE ARE

MD Anderson is one of the world's most respected centers focused on cancer patient care, research, education, and prevention. The institution is part of The University of Texas System and is one of only 53 comprehensive cancer centers designated by the National Cancer Institute.

FY22 QUICK FACTS

- **23,040** Employees, including 1,870 faculty
- 175,719 patients
- Outpatient 1.6M visits
- Inpatient 757 beds
- 20,314 surgeries
- 599,308 diagnostic imaging procedures

95 Radiation Oncologists

74 Physicists

172 RTT's including supervisors

80 Dosimetrists

60 Nurses

Our Radiation Oncology Team

THE UNIVERSITY OF TEXAS
MD Anderson Cancer Center
Making Cancer History®

Main Campus Building- 11 linear accelerators, 2 Gamma Knife Treatment Machines, and 4 CT simulators.

Ambulatory Care Building- (Across the street from Main Campus)- 6 linear accelerators, 1 MR Linac, 1 MR simulator, 2 CT simulators, and an HDR Suite

Proton Therapy Center- (Down the street from our Main Campus)-4 Proton gantries, 1 linear accelerator, 1 CT simulator, 1 MR simulator

West Houston Campus-3 linear accelerators, 1 CT sim, Brachy

Sugar Land Campus-2 linear accelerators, 1 CT sim

League City Campus- 3 linear accelerators, 1 CT sim

The Woodlands Campus- 3 linear accelerators, 1 CT sim

Several sites throughout the Houston Area Locations

Throughout our sites, we have different vendors/capabilities.

Varian, Semiens, Phillips, GE, Elekta, GK, MRI, Mosaiq, VisionRT C-Rad

THE UNIVERSITY OF TEXAS
MD Anderson Cancer Center
Making Cancer History®

MD Anderson's SGRT History

- First SGRT system 10+ years
- 4 AlignRT systems ACB (mainly used for breast)
- 1 AlignRT system Main (installed 8/2022)
- 11 C-Rad systems HAL's
- 2 Future C-Rad systems new PTC facility

Mask less Workflow, Why?

- Head and Neck, Lymphoma services
- Pathway for patients with claustrophobia, extreme cases needing Anesthesia
- Roughly 1/3 of our patient population treated with a mask require anxiety medication
- 2-5 patients a year treated under anesthesia
- Free up resources

New Process Workflow

M.D buy-in

↓

Information gathering

↓

Non-patient testing

↓

SOP creation

→ New Process Review (NPR) committee

↓

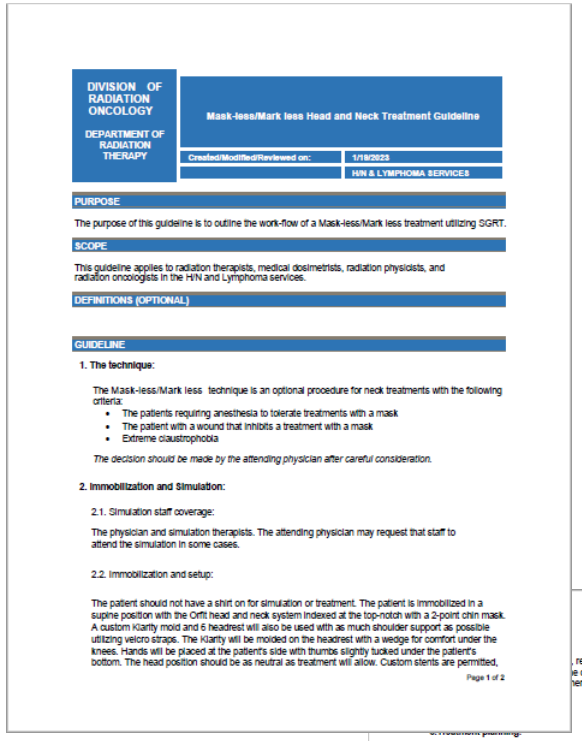
Revisions

↓

Clinical Operations committee

↓

Wide-scale implementation



DIVISION OF RADIATION ONCOLOGY

DEPARTMENT OF RADIATION THERAPY

Mask-less/Mark less Head and Neck Treatment Guideline

Created/Modified/Reviewed on: 1/18/2023

H/N & LYMPHOMA SERVICES

PURPOSE

The purpose of this guideline is to outline the work-flow of a Mask-less/Mark less treatment utilizing SGRT.

SCOPE

This guideline applies to radiation therapists, medical dosimetrists, radiation physicists, and radiation oncologists in the H/N and Lymphoma services.

DEFINITIONS (OPTIONAL)

GUIDELINE

1. The technique:

The Mask-less/Mark less technique is an optional procedure for neck treatments with the following criteria:

- The patients requiring anesthesia to tolerate treatments with a mask
- The patient with a wound that inhibits a treatment with a mask
- Extreme claustrophobia

The decision should be made by the attending physician after careful consideration.

2. Immobilization and Simulation:

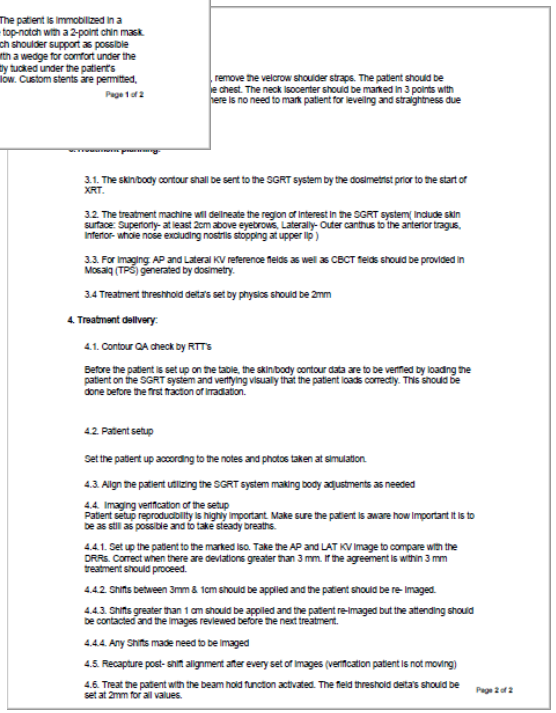
2.1. Simulation staff coverage:

The physician and simulation therapists. The attending physician may request that staff to attend the simulation in some cases.

2.2. Immobilization and setup:

The patient should not have a shirt on for simulation or treatment. The patient is immobilized in a supine position with the Orfit head and neck system indexed at the top-notch with a 2-point chin mask. A custom Klarity mold and 6 headrest will also be used with as much shoulder support as possible utilizing velcro straps. The Klarity will be molded on the headrest with a wedge for comfort under the knees. Hands will be placed at the patient's side with thumbs slightly tucked under the patient's bottom. The head position should be as neutral as treatment will allow. Custom stents are permitted,

Page 1 of 2



remove the velcrow shoulder straps. The patient should be
e chest. The neck isocenter should be marked in 3 points with
here is no need to mark patient for leveling and straightness due

3.1. The skin/body contour shall be sent to the SGRT system by the dosimetrist prior to the start of XRT.

3.2. The treatment machine will delineate the region of interest in the SGRT system(include skin surface: Superiorly- at least 2cm above eyebrows, Laterally- Outer canthus to the anterior tragus, Inferior- whole nose excluding nostrils stopping at upper lip)

3.3. For imaging: AP and Lateral KV reference fields as well as CBCT fields should be provided in Mosaiq (TPS) generated by dosimetry.

3.4 Treatment threshhold delta's set by physics should be 2mm

4. Treatment delivery:

4.1. Contour QA check by RTT's

Before the patient is set up on the table, the skin/body contour data are to be verified by loading the patient on the SGRT system and verifying visually that the patient loads correctly. This should be done before the first fraction of irradiation.

4.2. Patient setup

Set the patient up according to the notes and photos taken at simulation.

4.3. Align the patient utilizing the SGRT system making body adjustments as needed

4.4. Imaging verification of the setup
Patient setup reproducibility is highly important. Make sure the patient is aware how important it is to be as still as possible and to take steady breaths.

4.4.1. Set up the patient to the marked Iso. Take the AP and LAT KV image to compare with the DRRs. Correct when there are deviations greater than 3 mm. If the agreement is within 3 mm treatment should proceed.

4.4.2. Shifts between 3mm & 1cm should be applied and the patient should be re- imaged.

4.4.3. Shifts greater than 1 cm should be applied and the patient re-imaged but the attending should be contacted and the images reviewed before the next treatment.

4.4.4. Any Shifts made need to be imaged

4.5. Recapture post- shift alignment after every set of images (verification patient is not moving)

4.6. Treat the patient with the beam hold function activated. The field threshold delta's should be set at 2mm for all values.

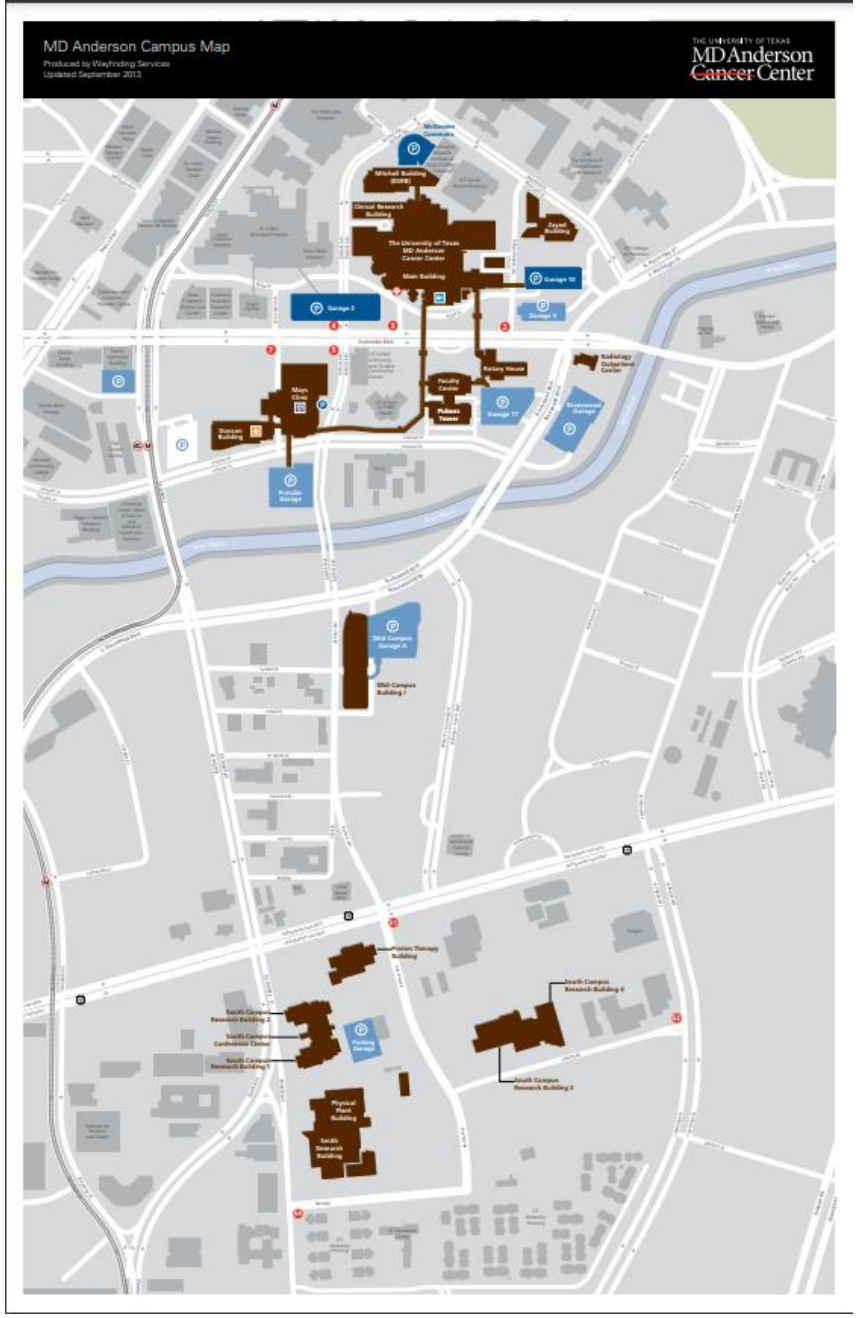
Page 2 of 2

Goals and Metrics

- Reduce anxiety medication by 30%
- Eliminate need for anesthesia for mask patients
- Eventually move to a maskless workflow for all H/N patients

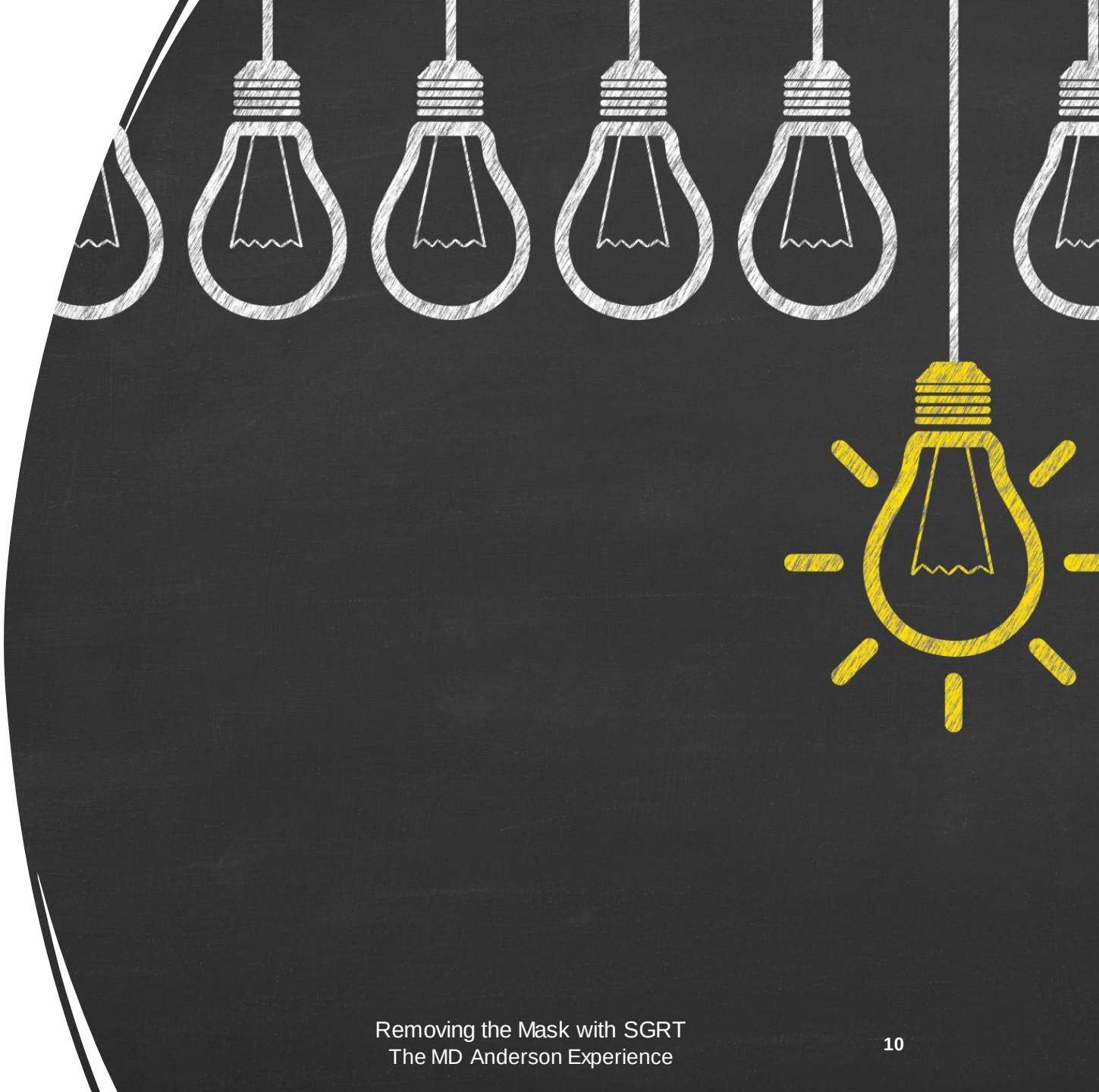
Challenges

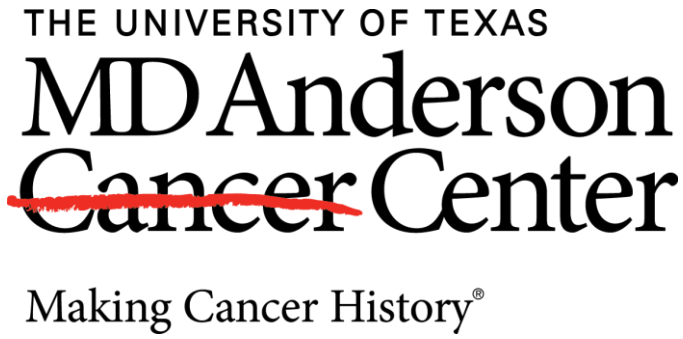
- Logistics
- Training
- Current resources
- Homogeneity
- Change enablement



Future Plans

- Develop a robust training program
- Pinpoint techniques that SGRT benefits
- Investigate expansion




THE UNIVERSITY OF TEXAS
MD Anderson
Cancer Center
Making Cancer History®